

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 1.002.078 WO | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) | |
| International application No. PCT/NL 03/00863 | International filing date (<i>day/month/year</i>) 04.12.2003 | Priority date (<i>day/month/year</i>) 10.12.2002 |
| International Patent Classification (IPC) or both national classification and IPC B26D7/18 | | |
| Applicant FICO B.V. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

I ☒ Basis of the opinion

II ☐ Priority

III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

IV ☐ Lack of unity of invention

V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

VI ☐ Certain documents cited

VII ☐ Certain defects in the international application

VIII ☐ Certain observations on the international application

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| Date of submission of the demand 30.06.2004 | Date of completion of this report 17.12.2004 |
| Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 </div> </div> | Authorized Officer Rabolini, M Telephone No. +31 70 340-2854 |



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NL 03/00863**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-7 as originally filed

Claims, Numbers

1-7, 9-17 as originally filed

8 received on 23.09.2004 with letter of 22.09.2004

Drawings, Sheets

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | 1-17 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-17 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-17 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: EP-A-1 066 932 (UHT CORP) 10 January 2001 (2001-01-10)
- D2: PATENT ABSTRACTS OF JAPAN vol. 2000, no. 03, 30 March 2000 (2000-03-30)
& JP 11 333791 A (NGK SPARK PLUG CO LTD), 7 December 1999 (1999-12-07)
- D3: PATENT ABSTRACTS OF JAPAN vol. 1995, no. 08, 29 September 1995 (1995-09-29)
& JP 07 132497 A (KATAYAMA NUKIGATA SEISAKUSHO:KK), 23 May 1995 (1995-05-23)
- D4: DE 41 03 339 A (NAUMANN SPEZIALWERKZEUG GMBH) 3 September 1992 (1992-09-03)

V.1

The present application fulfills the criteria of Articles 33(2) & 33(3) PCT concerning novelty and inventive step. The reasons therefor are the following.

V.2.1 INDEPENDENT METHOD CLAIM 1

The document **D1** discloses (the references in parentheses applying to this document):

Method for releasing slug (referred to as "chips") adhering to a stamp (P) in a punching machine (see paragraph 0001), by carrying the stamp (P), after performing a punching operation on a sheet material (W), with the active stroke at least partially through a cutting opening (13) in a cutting plate (21, 92) supporting the sheet material (W), and carrying the stamp (P) during the return stroke back again through the cutting opening (13) in the cutting plate (21, 92) which close-fittingly encloses the stamp (P).

V.2.2

The subject-matter of claim 1 differs from the method of D1 in that *the cutting opening functions during the return stroke such that the side of the cutting plate remote from the sheet material engages around the cutting opening as a scraping edge on slug adhering to the stamp and releases it from the stamp.*

V.2.3

The subject matter of claim 1 is therefore novel (Article 33(2) PCT).

V.2.4

The problem to be solved may be viewed as how to remove the slugs from the punch to ensure that they are not pulled back to or through the sheet material where they are free

to wreak havoc in subsequent operations on the sheet material or operation of the punch.

V.2.5

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) because it is not hinted at or suggested in the prior art to use the hard edge of the matrix die (cutting plate) to scrape off the slugs. D1 for example employs an elastic diaphragm to come into scraping contact with the slugs. This solution relies on the physical phenomenon of expansion of the slugs after punching due to a release of internal stresses, favoured by a mild plastic deformation following compression of the sheet material occurring during the punching operation. The expanded slug will widen beyond the cross-section of the punch and will catch on the under-side of the opening of cutting plate, and be scraped off.

V.3.1 INDEPENDENT CLAIM 8

The document **D1** discloses the preamble of claim 8.

V.3.2

The subject-matter of claim 8 differs from the method of D1 in that *the cutting opening in the cutting plate has a scraping edge for releasing the slug adhering to the stamp.*

V.3.3

The subject matter of claim 1 is therefore novel (Article 33(2) PCT).

V.3.4

The problem to be solved may be viewed as how to remove the slugs from the punch to ensure that they are not pulled back to or through the sheet material where they are free to wreak havoc in subsequent operations on the sheet material or operation of the punch.

The same reasoning of above point V.2.5 applies, mutatis mutandis, to the subject-matter of the claim 8, which therefore is also inventive.

V.4

Claims 3-7, 9,10,12-14,16,17 are dependent respectively on claim 1 or on claim 8 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

8. Punching machine (1, 12, 17, 22) for releasing slug (9, 15, 25) adhering to a stamp (2, 24), comprising:

- a cutting plate (3, 13, 21) provided with at least one cutting opening (6),

- at least one stamp (2, 24) for linear intermittent displacement which is displaceable

5 between a position in which the cutting opening (6) in the cutting plate (3, 13, 21) is left clear by the stamp (2, 24) and a position in which the stamp (2, 24) is carried through the cutting opening (6),

and wherein the stamp (2, 24) passes close-fittingly through the cutting opening (6) of the cutting plate (3, 13, 21),

10 **characterised in that** the cutting opening (6) in the cutting plate (3, 13, 21) has a scraping edge (11) for releasing slug (9, 15, 25) adhering to the stamp (2, 24).

EPO - DG 1
23 09 2004

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